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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/908,778 08/07/97 SCHEPS

R 77222

EXAMINER

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ART UNIT

PAPER NUMBER

2713

DATE MAILED:

12/28/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/908,778

Applicant(s)

Scheps

Examiner

Gims Philippe

Group Art Unit

2713



☒ Responsive to communication(s) filed on Jan 27, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-6 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-6 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

1. This is a first office action for application no. 08/908,778 filed on August 7, 1997 in which claims 1-6 are presented for examination.

#### *Abstract*

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract is objected to because of the following informalities:

- a) in line 1, "comprises" should be deleted.

- b) in line 6, "comprising" should be deleted.

See the above paragraph 2 for appropriate correction

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***Claim Rejections - 35 U.S.C. § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ulich et al. (US Patent no. 5,457,639).

Regarding claim 1, Ulich et al. discloses in fig. 1 the same imaging lidar comprising a pulsed laser for generating a line scan of light beam pulses to illuminate an area surrounding a target (See Ulich et al.'s abstract, and col. 5, lines 6-15), a photomultiplier tube for detecting energy from the light beam pulses scattered by the target and for generating an output signal representative of the scattered light beam (See Ulich et al. fig. 5, item 104, and col. 6, lines 49-51), an image acquisition controller coupled to the pulsed laser and to the photomultiplier tube for selecting pulse width and pulse rate of the light beam pulses and for generating a display signal from the output signal of the photomultiplier tube (See Ulich et al. fig. 1, scanner 20 and camera 18, and col. 5, lines 28-41), and a display coupled to the controller for generating an image from the display signal representative of the target (See Ulich et al. col. 6, lines 23-32).

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As per claim 3, Ulich et al. further discloses the same imaging lidar wherein the pulse width in about 5ns (See Ulich et al. col. 5, lines 9-15).

As per claim 5, Ulich et al. further discloses the same imaging lidar wherein the controller gates the output signal from the multiplier tube to select a range interval that includes the target (See Ulich et al. col. 6, lines 42-53).

***Claim Rejections - 35 U.S.C. § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Contarino et al. (US Patent no. 5,822,047).

Regarding claim 2, Ulich et al. discloses substantially the same limitations as previously set forth in the above rejection of claim 1.

It is noted that Ulich et al. fails to particularly disclose the same imaging lidar wherein the laser has a wavelength corresponding to blue-green color.

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Contarino et al. discloses the same imaging lidar wherein the laser has a wavelength corresponding to blue-green color (See Contarino et al. col. 2, lines 61-64).

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Ulich et al. and Contarino et al. before him/her, would be motivated to incorporate the laser having a wavelength corresponding to blue-green color in Ulich et al.'s imaging lidar for the same purpose of minimizing absorption in water as taught by Contarino et al.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Schneiter (US Patent no. 5,082,362).

As per claim 4, Ulich et al. discloses substantially the same limitations as previously set forth in the above rejection of claim 1.

It is noted that Ulich et al. fails to particularly disclose the same imaging system wherein the pulse rate is about 700 Khz.

Schneiter discloses the same imaging system wherein the pulse rate is about 700 Khz (See Schneiter col. 16, lines 31-33).

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Ulich et al. and Schneiter before him/her, would have had no difficulty to modify the imaging lidar system by providing a pulse rate of about 700 Khz for the same purpose of giving finer control over the raster scan rate as taught by Schneiter.

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9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Geiger (US Patent no. 5,117,126).

Regarding claim 6, Ulich et al. discloses substantially the same limitations as previously set forth in the above rejection of claim 1.

It is noted that Ulich et al. fails to particularly disclose a periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency.

Geiger discloses a periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency (See Geiger col. 5, lines 45-56, and col. 6, lines 7-15).

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Ulich et al. and Geiger before him/her, would have had no difficulty to modify Ulich et al.'s imaging lidar by incorporating the periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency for the same purpose of achieving a balance of the effective gain of the crystals as taught by Geiger (See Geiger col. 3, lines 51-60).

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Moberg (US Patent no. 5,181,212) teaches method of emitting on a specific wavelength

Fraunhofer line using a neodymium doped laser transmitter.


Ulich (US Patent no. 4,946,721) teaches imaging lidar system.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on Monday through Friday from 8 a.m. to 4 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelly, can be reached on (703) 305-4856. The fax phone number for this Group is (703) - 308-9052 (formal responses) and (703) -308-5399 (for draft responses).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)-305-3900

Gims S. Philippe



RICHARD LEE  
PRIMARY EXAMINER

December 23, 1999